## At a Glance

### What it is

■ The Office of Naval Research (ONR) Electronic Warfare Battle Management (EWBM) is the concept of providing a real-time, networked capability to assess the readiness of electronic warfare (EW) assets and coordinate their operations across operational domains.

### How it works

■ EW Battle Management will enable efficient and optimized control of EW resources and platform formations.

### What it will achieve

■ Resource coordination, enabling optimized application of EW across operational domains, allowing more threat systems and multiple aspects of the "red kill chain" to be addressed simultaneously

■ Real-time EW resource management, including readiness of EW resources, calculation of optimal formations and efficient allocation of EW resources

### Point of Contact

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Future non-kinetic defense of surface forces will require the coordination of distributed EW resources against a threat picture that evolves over time. The result is a need for a dynamic EWBM capability that allows for the efficient management of distributed EW resources, including robust fusion of sensor data and the coordination of countermeasure techniques.
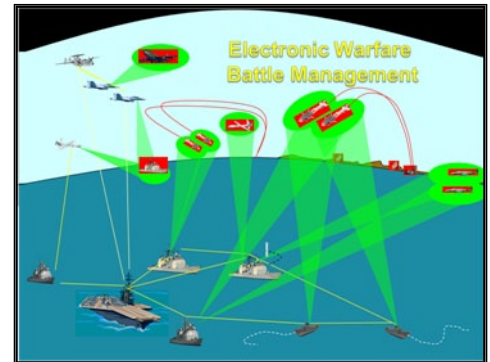


The vision for EWBM for Surface Defense is a data exchange architecture that allows for force-wide radio frequency (RF) threat and countermeasure situational awareness and provides layered EW mission management of available resources, from strategic to tactical to platform to technique. EWBM for Surface Defense will provide the ability to:

■ Assess the readiness of EW assets and capabilities across the battlespace

■ Enable efficient control, coordination and optimization of the use of distributed EW resources against both potential and detected threats

■ Extend the EW battlespace by coordinating data exchange across security and operational domains.

EWBM for Surface Defense will emphasize the following technology development areas:

■ Tactical service-oriented architecture, which is robust to low-bandwidth and high-latency communications, loss of connectivity and node-denial

■ Efficient and scalable data exchange that can dynamically assess and adapt the amount of EW data exchanged to varying blue force link utilization and capacity

■ Formation optimization, RF threat vulnerability and countermeasure effectiveness assessments.

### Research Challenges and Opportunities:

■ Resource coordination, enabling optimized application of EW across operational domains

■ Real-time EW resource management, including readiness of EW resources, calculation of optimal formations and efficient allocation of EW resources

■ Scalable, optimized and prioritized data management and data exchange

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